

Reply to Office Action dated November 2, 2006

REMARKS

Claims 1-22 are pending in the application. By this Amendment, the Abstract, the specification, and claims 1, 3, and 12-22 are amended. The Abstract and specification are amended to correct informalities. No new matter is added. Support for the claims can be found throughout the specification, including the original claims, and the drawings. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

The Office Action rejected claim 22 under 35 U.S.C. §112, second paragraph, as being allegedly indefinite. The Examiner's comments have been addressed in amending claim 22. Accordingly, the rejection should be withdrawn.

The Office Action rejected claims 12-22 under 35 U.S.C. §102(b) as being anticipated by Rak, U.S. Patent No. 5,239,285. The rejection is respectfully traversed.

Independent claim 12 a water softening device for a dishwasher. The water softening device comprises a first container holding an ion-exchange resin for removing heavy metal and metal ions from the water, a second container holding a predetermined amount of salt and salt water to supply the salt water to the first container to recycle the ion-exchange resin that is saturated, a float installed in the second container, and a sensor provided to the second container to sense a concentration of the salt water based on a distance of the float from the sensor and generate a signal corresponding the sensed distance. In contrast, Rak discloses a low salt level sensor and a method for detecting low salt levels. The liquid sensing apparatus disclosed by Rak comprises float 48, magnet 50, shaft 52, and hall effect switch 54. Rak teaches that the low salt

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level sensor "comprises detecting means for determining whether the float has risen in response to the addition of a predetermined amount of water to a height that indicates that there is sufficient salt in the tank to ensure that an adequate brine can be formed." See col. 3, lines 18-32 of Rak. Rak further teaches that "[a]mong the many means which could be used are an arm attached to the float which throws a switch when the float rises sufficiently or a cable or string attached to the float and a switch." Id. Additionally, Rak teaches that "[t]he means could also be a photoelectric switch mounted in such a manner to detect whether the float has risen sufficiently." Id. However, Rak at least does not disclose or suggest a sensor capable of sensing a concentration of the salt water based on a distance of the float from the sensor and generating a signal corresponding to the sensed distance. Rather, as acknowledged by the Examiner, Rak's "liquid sensing apparatus detects the brine concentration by determining if the float has risen to a certain height." Further, Rak does not disclose or suggest the claimed combination of independent claim 12.

Accordingly, the rejection of independent claim 12 over Rak should be withdrawn. Dependent claims 13-22 are allowable over Rak at least for the reasons discussed above with respect to independent claim 12, from which they depend, as well as for their added features.

The Office Action rejected claims 1-11 under 35 U.S.C. §103(a) as being unpatentable over Kendt, U.S. Patent No. 3,386,454, in view of Rak. The rejection is respectfully traversed.

The Office Action asserts that Kendt discloses all of the claimed combination except "a float and sensor for sensing the concentration of salt water." The Office Action then asserts that

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"Rak discloses a water softener with such features" and then concludes that "[i]t would have been obvious at the time of the invention, to modify the dishwasher disclosed by Kendt, to include the water softener that was conveniently used, such as that taught by Rak with a float type salt sensor, in order to detect and alarm the user of insufficient brine concentrations. However, as set forth above, Rak at least fails to disclose or suggest a sensor capable of sensing a concentration of salt water based on a distance of the float from the sensor and generating a signal corresponding to the sensed distance. Rather, as acknowledged by the Examiner, Rak's "liquid sensing apparatus detects the brine concentration by determining if the float has risen to a certain height." Accordingly, neither Kendt nor Rak, taken alone or in combination, disclose or suggest all the claimed features of independent claim 1, or the claimed combination.

Accordingly, the rejection of independent claim 1 over Kendt and Rak should be withdrawn. Dependent claims 2-11 are allowable over Kendt and Rak at least the reasons discussed above with respect to independent claim 1, from which they depend, as well as for their added features.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited. If the Examiner believes that any additional changes would place the

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application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,

Daniel Y.J. Kim
Registration No. 36,186
Carol L. Druzbick
Registration No. 40,287

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3701 DYK/CLD/jlg/kah/tlg

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Please direct all correspondence to Customer Number 34610